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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,962	11/21/2001	Hidefumi Nakata	P/1071-1504	1666

7590 05/30/2003  
Keating & Bennett LLP  
10400 Eaton Place  
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Fairfax, VA 22030

EXAMINER

DIAZ, JOSE R

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/989,962

Applicant(s)

NAKATA, HIDEFUMI

Examiner

José R Díaz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

➤ Applicant's election without traverse of claims 1-5 and 11 in Paper No. 10 is acknowledged.

### *Specification*

➤ The disclosure is objected to because of the following informalities:

- Page 2, line 1: the term "CVC" should be changed to --CVD--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

➤ The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

➤ Claims 1-5 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Agarwal et al. (US Pat. No. 6,201,276 B1).

Regarding claims 1 and 11, Agarwal et al. teach a MIM capacitor (see Figure 1C and col. 3, lines 40-42) comprising: a lower electrode (14) comprising a plurality of metal layers including a top metal layer (see page 4, lines 20-27); an upper electrode (19)

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(see Figure 1C), and an insulating metal oxide and a dielectric layers (16) positioned between the lower electrode and the upper electrode (see col. 4, lines 34-37). With regards to oxidation step described in the claim, Applicant should note that such limitations contain method of making characteristics given no patentable weight in determining patentability of the final device structure. Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding claim 2, Agarwal et al. teach that the top metal comprises a material selected from transitional metals and alloys thereof (see col. 4, lines 20-23).

Regarding claim 3, Agarwal et al. teach that the top metal layer comprises titanium (please consider the fact that titanium nitride comprises titanium) (see col. 4, lines 20-23).

Regarding claim 4, Agarwal et al. teach that the dielectric layer comprises silicon nitride (please consider the fact that Argawal et al. teach that the layer (16) can be made of, for example, tantalum oxide and silicon nitride) (see col. 4, lines 34-37).

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Regarding claim 5, Agarwal et al. further teach an oxidized silicon nitride passivation layer (18a) (see Figure 1C and col. 4, lines 34-37 and col. 5, lines 45-48). With regards to oxidation step described in the claim, Applicant should note that such limitations contain method of making characteristics given no patentable weight in determining patentability of the final device structure. Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

### ***Conclusion***

➤ The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawamura et al. (US Pat. No. 6,495,874 B1) disclose a capacitor comprising a multi-layer lower electrode and a multi layer dielectric layer (See col. 5, lines 35-45 and 65-67 and col. 6, lines 1-5); Cho et al. (US Pat. No. 6,414,348 B1) disclose a capacitor comprising a lower electrode (41), a SiON layer (42a) and metal oxide layer (43) (see Figures 2C and 2D); and Casper et al. (US 2002/0089810 A1)

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disclose a capacitor comprising a multi-layer lower electrode and a dielectric layer (see paragraphs [0108] and [0109]).

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R Díaz whose telephone number is (703) 308-6078. The examiner can normally be reached on 9:00-5:00 Monday, Tuesday, Thursday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 746-3891 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JRD  
May 22, 2003



**EDDIE LEE  
SUPERVISORY PATENT EXAMINER  
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